

Sleep apnea, congenital heart disease may be deadly mix for hospitalized infants

Infants often aren't screened for sleep apnea, but a new study suggests the disorder may be tied to an increased risk of death in infants with congenital heart disease.

Researchers at the University of Arizona College of Medicine–Tucson have found that hospitalized infants with congenital heart disease and central sleep apnea are four times more likely to die during their stay in the hospital than infants with congenital heart disease alone. Their findings are published this week in the *Journal of Clinical Sleep Medicine*.

“We were surprised that together these two conditions had such a strong association with death,” says Sairam Parthasarathy, MD, a professor in the Department of Medicine and a sleep specialist who contributed to the new study.

For the project, researchers mined through data from the Kids' Inpatient Database, the national database that collects pediatric discharge information from more than 4,100 U.S. community hospitals.

Between 1997 and 2012, the team found that 4,968 infants with congenital heart disease age 1 year or younger were diagnosed with sleep apnea.

Sleep apnea presents itself in several different forms, including central sleep apnea and obstructive sleep apnea. In central sleep apnea, the body temporarily pauses or decreases breathing efforts during sleep. Obstructive sleep apnea arises when the throat muscles temporarily relax and block the airway.

Of the infants with a heart abnormality, 193 had central sleep apnea and 679 had obstructive sleep apnea. The remaining 4,096 infants had sleep apnea, but its type was not specified in the discharge documentation.

Analysis of the discharge data showed that infants with central sleep apnea and a heart abnormality fared the worst. Not only were they four times more likely to die in the hospital, they stayed twice as long and had double the hospital bills at discharge.

Daniel Combs, MD, an assistant professor in the UA Department of Pediatrics and a sleep specialist who led the study, believes physicians must be vigilant if they are caring for an infant with a heart abnormality.

“Screening is important to prevent this,” Dr. Combs said. “We have to lower our threshold to screen for sleep apnea; that could improve these negative outcomes.”

He added, "If we learn that infants do have sleep apnea, we can refer them for treatment."

Treatments for central sleep apnea include supplemental oxygen or positive airway pressure therapy, a device that helps with breathing while asleep. In children with obstructive sleep apnea, tonsil removal usually is curative.

Dr. Parthasarathy advises parents of infants with congenital heart disease to talk to their pediatrician about the study's findings and request a referral to a sleep center or sleep specialist for further potential care.

Dr. Combs admitted that gaps in knowledge remain.

"By studying a limited supply of data, we only got a snapshot of these hospital cases. We were not able to see everything, like what medications the infants were on or what diagnosis they had," he explained.

The researchers hope to continue studying infants with both conditions to fill these gaps.

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More information:

Daniel Combs et al. Sleep-Disordered Breathing is Associated With Increased Mortality in Hospitalized Infants With Congenital Heart Disease, *Journal of Clinical Sleep Medicine* (2018). DOI: 10.5664/jcsm.7334

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